REMARKS

This is in response to the final office action dated August 21, 2007. Presently, claims 1-3, 8, 9 and 17-25 are pending in the case and are rejected. Applicant is submitting this response in order to place the claims in condition for allowance. Applicant acknowledges that the requirement to traverse has been made final by the examiner and claims 4-7, 10-16 and 26-36 are withdrawn without prejudice.

In the office action claims 2, 18-25 were rejected under 35 U.S.C. § 112 as being indefinite for reasons as stated in the action. Applicant has reviewed those claims and has made the necessary claim amendments in order to overcome this rejection or will provide arguments as to why these rejections are not soundly based.

Claims 1-3, 8, 9, 17-25 were rejected under 35 U.S.C. § 102(b) as anticipated by or in the alternative under 35 U.S.C. § 103(a) as obvious over Yoshimura et al. (4,693,879).

Further, claims 1-3, 8, 9, 17-25 were rejected under 35 U.S.C. § 102(b) as anticipated by or in the alternative under 35 U.S.C. § 103(a) as obvious over Johnson (3,408,164).

Applicant acknowledges the rejection of the claims and respectfully traverses.

35 U.S.C. 112 Rejections

The fundamental principle contained in 35 USC 112, second paragraph is that applicants are their own lexicographers. Applicants can define in the claims what they regard as their invention essentially in whatever terms they choose so long as the terms are not used in ways that are contrary to accepted meanings in the art. Applicant may use functional language, alternative expressions, negative limitations or any style of expression or format of claim which makes clear the boundaries of the subject matter for which protection is sought.

As long as the language is "clear," it is not indefinite.

In claim 2, the Examiner noted that it was not clear how a carbon black can be from both thermal and furnace blacks. The Office Action indicates that Claim 2 is indefinite because "it is not clear how a carbon black can be from both groups." Applicants direct the attention of the Office to the specification at page 7, line 30 through page 8, line 39, page 11, line 31 through page 12, line15, Figure 1, and page 16, lines 5-20. Applicant's invention, as disclosed and

described, makes clear the boundaries of the subject matter for which protection is sought. Applicant's novel process makes it possible to have carbon black that is both a furnace carbon black and a thermal carbon black.

The Office Action indicates that Claim 25 is indefinite because it "is unclear as to what "'indirect' encompasses/means." Applicant has amended the claim to claim both "direct and indirect" food contact applications. Applicants direct the attention of the Office to the specification at page 20, line 7 through page 21, line 31, and Tables 10 and 11 for a description of what is meant by "direct" and "indirect" in Claim 25. Applicants also direct the attention of the Office to 21 CFR 178.3297.

In claim 19 the Examiner felt it was unclear as to what 'stronger structure' meant. Claim 19 has been amended to reflect that 'stronger structure' means that the aggregates of these carbon blacks are stronger and more difficult to break as compared to regular furnace blacks (Test - ASTM D3493 COAN; in this test OAN (oil absorption number) of a carbon black is measured by subjecting it to a pressure of 24,000 psi 4 times, the reduction in oil absorption number from the original to final compression is known as COAN)

The Examiner felt Claim 20 was unclear, as FDA requirements can change. However, Claim 20 was amended to reflect meeting current FDA requirements.

The Examiner felt that claims 18 and 21-25 are unclear as to the basis for comparison. Claims 18 and 21-25 have been amended to show the comparison of these carbon blacks to furnace and acetylene blacks

The Examiner noted that Claim 24 contains improper Markush language. The claim has been amended to include the proper language.

35 USC 102(b) and/or 103(a) Rejections

Yoshimura et al (4,693,879) reference

Claims 1-3, 8,9, 17-25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yoshimura et al. (4,693,879).

Yoshimura et al. discloses an ultrasonic device and filtration process for the removal of physical impurities and subsequent recovery of solvent (toluene) by heating at temperatures

<400°C; whereas the present application discusses heat-treatment of carbon black in the range of 800-3000°C. This temperature range results in the removal of impurities (non-carbonaceous materials) that are either on the surface of black or in the carbon black particle and also realignment and growth of graphene structures (see attached micrograph, Exhibit A). In doing so the carbon black becomes more graphitic and pure and as with any carbon depending on the heat history it becomes more oxidation resistant and hydrophobic. It is clear, therefore, that the '879 patent does not teach or disclose this process, nor does it render the process obvious.

The Yoshimura et al reference does not disclose or teach all the limitations of the claims so as to render the claims unpatentable under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious.

Johnson (3,408,164) reference

Claims 1-3, 8,9, 17-25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Johnson (3,408,164).

The Johnson patent discloses a plasma process with extremely high temperatures (energy state of particle activity above the gaseous state, temperatures in excess of 5000°C). Further Johnson patent does not disclose any changes to the carbon black properties, but instead a rubber property ("modulus") that is impacted by the use of carbon black. The current application discusses heat treatment and its impact on the changes in carbon black properties (e.g. graphitic structure, low ash, low moisture pickup, etc.). Furthermore, in the present application the transformation occurs in the solid state with a resistive heating (versus particle activity above gaseous state) and temperature ranges are much lower (800-3000°C). In addition, the modified carbon blacks in Johnson patent show small changes in sulfur level; whereas, the thermally modified carbon blacks have reductions in sulfur level that can be as high as 90+%. It is not obvious from the Johnson patent that the carbon black will have the properties discussed in the current application.

Having complied with the request of the examiner, applicant is requesting examination of the elected claims and the issuance of the Notice of Allowance.

Should the Examiner feel that a telephone conference would advance the prosecution of

this application, he is encouraged to contact the undersigned at the telephone number listed below.

Applicant respectfully petitions the Commissioner for any extension of time necessary to render this paper timely.

The fee due for a two month extension of time is being charged to Deposit Account 50-0694. However, if this fee is insufficient, please charge any fees due or credit any overpayment to Deposit Account No. 50-0694.

Respectfully submitted,

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